

## PATENT ABSTRACTS OF JAPAN

(11) Publication number : 09-000890

(43) Date of publication of application : 07.01.1997

(51) Int.Cl.

B01D 63/08

B01D 65/02

B01D 65/08

C02F 1/44

(21) Application number : 07-176895

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(22) Date of filing : 21.06.1995

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## (54) FLAT MEMBRANE SEPARATION DEVICE

## (57) Abstract:

**PURPOSE:** To prevent slime and scale from being generated to maintain the filtration performance of a filter membrane for a long period of time by a method wherein a plurality of rectangular flat membrane modules are fitted in a cylindrical, rectangular casing horizontally, parallelly, spaced apart predetermined intervals, and a large number of bundles of long fibers are stretched over nearly whole surfaces of the modules.

**CONSTITUTION:** Biologically treated liquid in which organic matters in organic waste water are decomposed by the biological actions of bacteria in a biological treating tank 10 to reduce BOD, COD etc., is introduced, as liquid to be treated, into a rectangular casing 1 from an inlet port 12 for liquid to be treated of a flat membrane separation device. And the liquid is caused to flow upwards by an air lift effect of gas from a diffuser means 6 through a plurality of passages 5 for liquid to be treated between flat membranes 3, in which a large number of bundles 4 of long fibers are stretched over the whole surfaces of the membranes. And at that moment, the internal pressure of the flat membrane 3 is reduced by a pressure reducing device connected to a discharge pipe 7, and hence water only is passed through filter membranes and taken out. On the other hand,

